

### 3.15 Multiple Angle Equations (odd answers)

1.  $x = \frac{2\pi}{3} + 4\pi k, x = \frac{10\pi}{3} + 4\pi k,$

3.  $x = \frac{\pi}{3} + 4\pi k, x = \frac{5\pi}{3} + 4\pi k$

5.  $x = \frac{\pi}{6} + \frac{\pi}{2}k$

7.  $x = 120^\circ, 150^\circ, 300^\circ, 330^\circ$

9.  $x = 22.5^\circ, 157.5^\circ, 202.5^\circ, 337.5^\circ$

11.  $x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

13.  $x = \frac{\pi}{3}$

15.  $\alpha = 53.4^\circ + 120^\circ k, \alpha = 6.6^\circ + 120^\circ k$

17.  $t = 1 + 6k, t = 2 + 6k$

19. *period* :  $\frac{\pi}{2}$ , *asymptotes* :  $x = \frac{\pi}{4} + \frac{\pi}{2}k$ , *range* :  $(-\infty, \infty)$